**DIGITALIZATION: FROM WHERE TO WHERE**

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**ABSTRACT**

Humankind has always been looking for ways to make things easier, and this has been the basis of important inventions and discover throughout human history.

Digitization began in 1679, when Gottfried Wilhelm Leibniz developed the first binary system and then published it in 1703 with a book on public understanding of the system )Swetz, 2003).

Over time, with the evolution of digital technology, people began to generate ideas for using business technology in new ways, not only to do old things faster but also to come up with new solutions, and that was when the digital revolution began to take shape.

Digital technology has emerged as transforming the global economy, as technology futurist Nicholas Negroponte’s (1995) pioneering book “Being Digital” (1995) describes how the old industrial economy was destroyed by a new digital economy (Snow et al., 2017).

Since the late 1980s, the digital revolution has revolutionized the economy and society. The first was the development of a connected economy characterized by the widespread use of the Internet and the expansion of broadband networks. This was followed by the development of the digital economy through the increasing use of digital platforms as business models for the supply of goods and services. It is now moving towards a digital economy whose production and consumption models are based on the combination of digital technologies in all economic, social and environmental dimensions.

Digitization offers growing economic growth: Countries at the most advanced stage of digitization enjoy 20% more economic benefits than countries in the early stages. Digitalization has a proven impact on reducing unemployment, improving the quality of life and increasing citizens’ access to public services. Finally, digitalization allows governments to act more transparently and efficiently (Sabbagh et al., 2012).

The outbreak of the COVID 19 epidemic has accelerated the digital transformation process. Regardless of how the crisis unfolds and what the consequences are, it is clear that digital technologies will continue to change the way people live and work. The advent of 5G and the Internet of Things has accelerated data generation and given urgency to the ongoing policy debate about data sovereignty, privacy and security. In the future, as companies increase automation to increase flexibility in the face of possible health crises - especially in production facilities - the costs and benefits of automation will increase on the one hand, and the importance of data flow between companies will increase on the other hand, so these issues may become more critical.

Despite the variety of definitions of digital transformation, there is a common ground in all definitions: Digital transformation debate is about people and the technology regarding digital technology adoption and integration and cultural change. Given this issue, the purpose of this study is to investigate importance and the future of digitalization in organizations according to its evolution so far.

***Keywords:*** *Digitalization, Developed Countries, Advanced Technologies, Cultural Change*

**DİJİTALLEŞME: NEREDEN NEREYE**

**ÖZET**

İnsanlık her zaman işleri kolaylaştırmanın yollarını aramıştır ve bu, insanlık tarihi boyunca önemli buluşların ve keşiflerin temelini oluşturmuştur.

Sayısallaştırma, 1679'da Gottfried Wilhelm Leibni’'in ilk ikili sistemi geliştirmesi ve ardından 1703’te sistemin kamu tarafından anlaşılması üzerine bir kitapla yayınlamasıyla başlamıştır.

Zamanla, dijital teknolojinin evrimi ile insanlar sadece eski şeyleri daha hızlı yapmak için değil, aynı zamanda yeni çözümler bulmak için iş teknolojisini yeni şekillerde kullanmak için fikir üretmeye başlamış ve böylelikle dijital devrim şekillenmeye başlamıştır.

Teknoloji fütüristi Nicholas Negroponte’nin (1995) öncü kitabı “Dijital Olmak”’da (1995), eski endüstriyel ekonominin yeni bir dijital ekonomi tarafından nasıl yok edildiği açıklandığı gibi dijital teknolojinin küresel ekonomiyi dönüştürdüğü ortaya çıkmıştır.

1980’lerin sonlarından bu yana, dijital devrim ekonomide ve toplumda devrim yaratmıştır. Birincisi, İnternet'in yaygın kullanımı ve geniş bant ağlarının genişlemesi ile karakterize edilen bağlantılı bir ekonominin gelişmesidir. Bunu, mal ve hizmet tedariki için iş modelleri olarak dijital platformların artan kullanımıyla dijital ekonominin gelişimi izlemektedir. Artık üretim ve tüketim modelleri tüm ekonomik, sosyal ve çevresel boyutlarda dijital teknolojilerin birleşimine dayalı bir dijital ekonomiye doğru ilerlemektedir.

Dijitalleşme artan bir ekonomik büyüme sunmaktadır: Dijitalleşmenin en ileri aşamasındaki ülkeler, erken aşamalardaki ülkelere göre %20 daha fazla ekonomik faydadan yararlanmaktadır. Dijitalleşmenin işsizliği azaltmada, yaşam kalitesini iyileştirmede ve vatandaşların kamu hizmetlerine erişimini artırmada kanıtlanmış bir etkisi vardır. Son olarak, dijitalleşme, hükümetlerin daha şeffaf ve verimli hareket etmelerini sağlamaktadır.

COVID 19’un salgınının ortaya çıkması, dijital dönüşüm sürecini hızlandırmıştır. Krizin nasıl ortaya çıktığı ve sonuçlarının ne olup olmadığı fark etmeksizin, dijital teknolojilerin insanların yaşama ve çalışma şekillerini değiştirmeye devam edeceği açıktır. 5G ve Nesnelerin İnterneti’nin ortaya çıkışı, veri üretimini hızlandırmış ve veri egemenliği, gizliliği ve güvenliği hakkında devam eden politika tartışmalarına aciliyet kazandırmıştır. Gelecekte şirketler olası sağlık krizleri karşısında esnekliği artırmak için otomasyonu arttırdıkça - özellikle üretim tesislerinde – bir taraftan otomasyon maliyetleri ve faydaları artacak diğer taraftan şirketler arasındaki veri akışının önemi de artacak ve böylelikle bu konular daha kritik hale gelebilecektir.

Dijital dönüşüm tanımlarının çeşitliliğine rağmen tüm tanımlarda ortak bir payda bulunmaktadır: Dijital dönüşüm tartışması, dijital teknolojinin benimsenmesi ve entegrasyonu ve kültürel değişim ile ilgili olarak insan ve teknoloji hakkındadır. Bu konu göz önüne alındığında, bu çalışmanın amacı, bugüne kadarki evrimine göre örgütlerde dijitalleşmenin önemini ve geleceğini araştırmaktır.

***Anahtar Kelimeler:*** *Dijitalleşme, Gelişmiş Ülkeler, İleri Teknolojiler, Kültürel Değişim*

1. **INTRODUCTION**

Digitalization is a hot topic that is discussed a lot in industries and organizations these days and has received special attention. As companies go digital, they invest a lot of money in deploying and using new technologies. But still, many companies are facing challenges in fully utilizing the new technology. In almost every industry, organizations are looking for digital transformation of their business. Responsible managers are setting up a digitization strategy to ensure the sustainability of their business and ensure the agility required when or if disruption occurs. Today, everyone knows that digitalization of business has countless advantages for the organization, although these advantages are different depending on the goals of the organization. But an organization whether it is transitioning from paper to electronic invoicing, from traditional sourcing of goods to e-procurement, or digitizing its end-to-end supply chain management, has taken this path and can benefit from its specific benefits. . These benefits include: lower costs, less manual work, fewer errors, more revenue, less labor, control over cash flow, data-driven decision making, and other benefits. Indeed, to create a successful transformation in the digital world, what is needed and where to start? To find the answer to this question, this article discusses the evolution of digitalization and the basic concepts in this category.

1. **LITERATURE REVIEW**

Today, the world is in a field of revolution, which is supported by increasing innovation and discovery in the world of technology and steps forward and grows more with each step. The transfer of information from one person to another happens quickly regardless of their geographical locations. Digitalization has completely changed the way people work, finance and bank, shop and trade. In the meantime, small and medium-sized companies and government organizations have welcomed technology and digitization in their activities because they have found that this transformation creates efficiency and significantly reduces operational costs. However, it should be noted that digitization is a continuous process as experts around the world continue to invent new features of digitization that help transfer information faster, easier and more efficiently.

The world of digitization has passed several milestones, each with its equal share of lessons and achievements that have helped shape the current digital technology and can provide us with a clear vision of the future. Since the late 1980s, the digital revolution has transformed the economy and society. First was the development of a connected economy, characterized by widespread use of the Internet and the expansion of broadband networks. This was transformed by the development of the digital economy through the increasing use of digital platforms as business models for the supply of goods and services. Now is the move towards a digital economy whose production and consumption models are based on digital integration technologies in all economic, social and environmental dimensions. The adoption and integration of advanced digital technologies (5G mobile networks, Internet of Things (IoT), cloud computing, artificial intelligence, big data analytics, robotics, etc.) means that the world is moving from the current world to an advanced world. It is more a world where the traditional economy with organizational, production and governance systems overlaps or merges with the digital economy with its innovative features in terms of business, production and business models. Business organization and governance this leads to a new and digital intertwined system in which the models of both areas interact and create more complex ecosystems that are currently changing organizationally. (ECLAC, 2018).

**2.1. Digitization**

It is important to note that terms such as “digitization,” “digitalization,” and “digital transformation” are often confused, as they are often used interchangeably. However, there are certain differences between the terms that should be kept in mind. The first term, “digitization,” involves the conversion of analog materials (such as images, video, and/or text, etc.) into digital format (Larson & Vitaoja, 2017; Feldman, 1997; Brynjolfsson & McAfee, 2014).

 The second term is "digitalization," which refers to the process by which an individual's use of digital/computer technology (also mobile phone applications) is adopted or, alternatively, increased by an individual (Wachal, 1971; Castells , 2010). Overall, digital technology is implemented with the aim of creating an introduction to digital well-being. A communication infrastructure that connects the different activities of different actor processes (Van Dijk, 2012; Larson & Vitaoja, 2017). "Digital transformation" is a much broader term that means the strategic transformation of a customer-centric business that requires an inclusive, cross-departmental organization. Change in addition to the implementation of digital technologies (Bloomberg, 2018; Cochoy et al., 2017). Due to its scope, digital transformation is not really a matter of implementing a single project, but rather a whole set of different projects, effectively requiring the organization to better deal with change as a whole.

Business digitalization is the integration of technology that changes the way organizations operate across their various domains, services and channels with customers and other stakeholders. A true digital transformation process goes beyond buying and using a new tool or software. This requires an honest commitment from the entire organization to evaluate, challenge and reconfigure business processes in a way and at a pace that works for that company, their customers and their suppliers. For this reason, digitization and digital transformation are two useful and important terms to describe the changes and impact that digital technology has had on society as a whole. That is, intelligent algorithms make our daily tasks easier, and in many cases it is almost impossible to imagine how it could be managed without them. The use of artificial intelligence and robotics continues to increase at a rapid pace. Digital transformation refers to the customer-driven strategic business transformation that requires cross-cutting organizational change as well as the implementation of digital technologies. In reality, digital transformation requires the organization to deal better with change overall, essentially making change a core competency as the enterprise (Jacson Bloomberg, 2018).

Digital technologies have grown exponentially and their use has become universal. Thanks to the widespread use of smartphones and the resulting access to information, social networks, and audiovisual entertainment, ubiquitous and constant connectivity has reached much of humanity. The acceleration of technical progress in the digital domain has made the use of devices and applications using cloud computing, big data analysis, block chains or artificial intelligence routine. The technological revolution has combined with changes in the strategies of companies at the forefront of digital technology adoption to significantly increase the role of global platforms, with the result that more than twenty or so established companies wield excessive economic and political power.

**2.2. Developed Countries**

For many years, whenever the meetings of the World Trade Organization (WTO) are held, an interesting discussion is raised among countries. Which country is developed and which countries are developing or not developed? When the discussion of developed countries was raised for the first time, naturally, some countries were also considered underdeveloped. It quickly became clear that this literature is not politically correct and gradually three terms became popular in the economic and political literature of the world:

-Developed Countries

-Developing Countries

-LDC or Least Developed Countries

The positive feature of the new literature was that all countries were somehow developed; some less and some more.

In fact, a developed country - also called an industrialized country - has a mature and complex economy, usually measured by gross domestic product (GDP) and/or average income per inhabitant. Developed countries have advanced technological infrastructure and diverse industrial and service sectors. These countries are leading the digitalization debate, and their citizens typically enjoy access to quality healthcare and higher education.The following graph can be a proof of this claim and definitely this progress has accelerated in the following years.

**2.3. Advanced Technologies**

Advanced technology today includes big data analytics, the Internet of Things (IoT), 3D printing, autonomous robots, augmented and virtual reality; cloud computing, cybersecurity, simulation and blockchain. Many scholars and commentators argue that the integration of these technologies marks the commencement of the fourth industrial revolution or Industry 4.0 (e.g., Liboni etal., 2019; Rüßmann et al., 2015; Sony & Naik, 2020; Strange & Zucchella, 2017). This emerging technology framework is based on cyber-physical systems coordinated by wireless and internet-based protocols and standards (He et al., 2020). The key parameters of Industry 4.0 are big data, advanced analytics, human–machine interface, machine-to-machine communication and digital-to-physical transfer (Brun, Gereffi, & Zhan, 2019). Advanced digital technologies are developing rapidly. Thus, they are impacting nearly every industry by changing the way firms operate in the global economy (Alc´acer, Cantwell, & Piscitello, 2016). Specifically, these technologies shape how firms integrate their geographically dispersed strategic partners, specialised suppliers and customer bases into complex structures, referred to as global value chains (Kano, Tsang, & Yeung, 2020). Further, the adoption of advanced technologies is associated with greater access to international markets and increased international opportunity recognition (Dillon, Glavas, & Mathews, 2020; Sinkovics, Sinkovics, & Jean, 2013). Utilizing advanced technologies may reduce transaction costs (Chen & Kamal, 2016), alter the geographic span and density of global value chains (Hannibal & Knight, 2018; Laplume, Petersen, & Pearce, 2016) and facilitate the international collaboration of firms (Autio, Mudambi, & Yoo, 2021). Big data analytics, three-dimensional (3D) printing, advanced robotic systems, cloud computing, augmented and virtual reality and blockchain are examples of technologies that are slowly reshaping global value chains.

The role of IT in companies has changed significantly. Some scholars suggest (Byrd & Turner, 2001) that information technology is no longer considered just as a tool to support business processes; IT is regarded now as a resource for innovative activity and solving technological problems. In certain circumstances, IT can become a “strategic vehicle” and a source of competitive advantage for a company. Companies are interested in making information technology contribute to the performance in a more measurable, direct, and flexible way (Johannsen & Goeken, 2006). Earlier information technologies used to perform auxiliary functions; today they are the “driving force behind business innovation” (Kieβling et al., 2010). That is, at present, in the developed countries, information technology management has transformed from a business support function to an efficiency improving tool and a driver of business innovation and digital transformation (Nissen et al., 2018).

* 1. **Cultural Changes**

Digital transformation is currently the focus of governments, ministries, departments, businesses and researchers. The study of culture in companies for digital transformation is an urgent issue, because digital transformation is not only an effort to invest in the application of information technology, but a comprehensive and deep transformation. In order to fully exploit the power of booming technological advances to improve efficiency, competitiveness, and lay the foundation for a long-term development journey, businesses must understand the importance of culture in the digital transformation process. Deal & Kennedy (2000) define: Simply put, organizational culture is "the way things are done here". And in 2004, Needle said: Organizational culture also includes the company's vision, core values, standards, systems, symbols, language, assumptions, beliefs, and behaviors.

According to N. Demetr - French sociologist: "Organizational culture is a system of concepts, symbols, values ​​and patterns of behavior that are identified and followed by all members of the company" (Lan, 2021).There are many concepts of corporate culture, but one of the most general and a popular concept is presented by the American sociologist Edgar H. Schein (2004): "Organizational culture: is a set of methods and rules of engagement. With problems of external compliance and internal unity among employees, rules that worked in the past and are still relevant today (Lan, 2021). These rules and procedures are the starting point in choosing appropriate action, analysis and decision making by employees. The members of the company's organization did not think twice about the meaning of these rules and procedures, but considered them right from the beginning.

From the concept of Edgar H. Sheen, it can be understood that the organizational culture is formed and developed in parallel with the business development process, the main values, rules, management style, business methods, and the behavior and attitude of all company members in the shadow of this organizational culture. is formed. The importance of organizational culture arises when it helps businesses adapt to changes in the external environment. Changing a long-standing culture in the business is a difficult thing, but it must be determined that change to meet the requirements of the "digital age" is urgent, first requiring leaders as well as must "get over yourself". The culture of the digital transformation era has new characteristics. First is the nature of “first digital thinking”, then fast and flexible adaptation, innovation, data-driven decision making, customer-centricity, collaboration, and an open culture (Capgemini, 2017).In a rapidly changing digital world, culture has more than ever the potential to foster a collective sense of speed, agility and innovation. Companies must be proactive in creating new systems and policies and reinterpreting their corporate culture in the digital workplace, or risk losing customers, productivity and employees. Organizations that will succeed in this new digital workplace are those that can embrace innovation and adopt new digital practices while managing those digital experiences for their employees, including creating distinct lines between work and non-work, and Overall creation of the workplace. It is more human-oriented than technology-oriented. One of the big advantages of the digital workplace is that new technologies enable worker mobility, flexibility, and improved efficiency and productivity. Organizations are implementing ongoing deliberate approaches to create a more flexible environment that is better able to facilitate innovative and flexible working practices. A recent study conducted by several companies and published by MarketsandMarkets™, estimated the Digital Workplace Market will grow from $13.4 billion in 2018 to $ 35.7 billion by 2023. This is a compound annual growth rate of nearly 22 percent during this period (Amador, 2019).

Despite understanding the importance of culture, leaders struggle to create adaptive cultures, focusing only on defining and communicating the culture they want, rather than encouraging the behaviors and actions needed to foster that culture. Culture is more than just a byproduct of a charismatic leader, inspirational speeches, or powerful messages. It is a pattern of behavior that is reinforced over time by systems and people. Leaders and managers of organizations must focus on their biggest asset, i.e. personnel, to create meaningful changes in the new culture of digitalization.

1. **METHODOLOGY**

The main problem of this research is to understand the evolution of digitalization. The aim of the study is to shed a light on the components of digitalization and the evolution of it in the literature from the organizations and their management point of view. This study is conducted conceptually in order to give a brief assessment on digitalization.

Although the need to use new technologies to keep up with the very high speed of digitalization is quite clear, but it is seen that in this field, it is the developed countries that benefit the most from this category. But one of the advantages of digitalization is that an organization or a small company or even an individual, if he/she learns the topics of advanced technologies and his/her information is up-to-date through online classes or application guides, can do so without depending on the government and without considering that he/she lives in a developed or developing country and even less developed, he/she can benefit from these advantages. However, it is undeniable that; If the platform for this work is provided throughout the country and the government, benefiting from these facilities for organizations, large and small companies, and citizens will not only be easier but also more enjoyable, and the correct culture of using digitization and learning and updating advanced technology knowledge. There is an epidemic in public and private organizations as well as ordinary citizens of the society. For example, medical diagnostic laboratories in the private sector in India, which prepare the results of tests conducted in the United States through the Internet, and due to the time difference, in fact, that laboratory in the United States can claim that it is working 24 hours a day. While it is only use of technology that gives, power to make such a claim and ability to use Indian expert force. While during these days digital currency, which is one of the hot topics today, especially among young people. You can be a businessman at home, with a mobile phone, with just a little knowledge and experience, and without dependence on a company or organization, and fill your electronic wallet with digital currency in less than a few hours. Certainly, for this person, issues such as developing or developed or less developed country, embargo, war between countries and such issues do not have any special meaning and as he has filled his electronic wallet, he can use digital currency exchanges. Convert it to dollars and make your online purchases from anywhere in the world. Or even take a step further and buy without conversion from places that accept digital currency for the supply of their services and products. In the meantime, there are those who support and oppose the development of new technologies and the world of digitization with their own opinions, but whether it is liked or not, it has to be accepted that this is a great revolution that has started a while ago and regardless of the agreement or opposition of scientists and philosophers. , governments and organizations are progressing faster than any industrial revolution it has been seen so far.

The current generation ranges from coin-operated phones and old analog phones, followed by digital phones, large and heavy mobile phones, to today's advanced mobile phones, which range from photography and video cameras to bank applications and daily shopping. and taking a taxi and participating in online classes and games and entertainment that are available everywhere and has experienced thousands of other facilities with just one touch; While he has not yet entered middle age and will soon be able to experience new technologies such as the Internet of Things and the like. And this is the speed of progress that has not existed in any industrial revolution. Unfortunately, even though our world has become a global village with the presence of the Internet and advanced technologies, and there are practically no boundaries for humans, but there is still a correct culture of using this gift - which may be seen as world peace - between governments and countries. It is not common, and there are still disputes, wars, fights over power, maintaining geographical borders and even in some cases the thought of expanding these borders, racial discrimination and thousands of other unresolved problems. As changing the organizational culture to use advanced technologies and digitization becomes possible by training and keeping organizational knowledge up-to-date, and investing in the most valuable asset of an organization, i.e. its personnel, should be done in this direction, maybe it is time to Human beings are considered as the most valuable assets of the earth, and in order to change the global culture to have a better and more peaceful life and to make better use of the facilities of the digitization era, new plans should take place in global organizations.

1. **CONCLUSION**

According to the topics mentioned in the paper, the progress of today's world towards digitalization has started for some time and is progressing forward at a staggering speed. It is a phenomenon that not only cannot be avoided, but must be faced with it with proper planning and timely measures and take advantage of it. Investing to achieve such gains seems wise, and organizations must ensure that they have the right people and culture to implement it in order to succeed in digitalization. The digitization of an organization requires the creation of a new organization in which the necessary infrastructure is prepared to use the benefits of digitization, and the organization's personnel receive the necessary training in this regard and are aware that they are learning every day with the motivation to create change. New content and updating of taught content in the infinite digital world. In fact, the principle of persistence in learning and updating employee information in any organization is one of the most key points that must be established in the new organizational culture.

The fact is that digitization is accelerating and will definitely change our business models and there will be no stopping it. It should be consciously accepted that there is no question of choice anymore, and like all revolutions, it will bring great achievements to the winners and destruction to the losers. It is important to pay attention to the fact that digitization and new technologies, followed by culture change, should be discussed not only in developing countries, but also globally. Just as a true digital transformation process requires an honest commitment of the entire organization to evaluate, challenge and reconfigure business processes, a true digital transformation process takes place worldwide when perspectives are not limited to a specific country or segment.

1. **REFERENCES**
* Alc´acer, J., Cantwell, J., & Piscitello, L. (2016). Internationalization in the information age: A new era for places, firms, and international business networks? *Journal of International Business Studies, 47*(5), 499–512. <https://doi.org/10.1057/jibs.2016.22>.
* Amador, C. (2018). The future of work: The rise of the digital workplace. Retrieved March 2, 2019, from <https://allwork.space/2019/02/the-future-of-work-the-rise-of-the-digital-workplace/>.
* Autio, E., Mudambi, R., & Yoo, Y. (2021). Digitalization and globalization in a turbulent world: Centrifugal and centripetal forces. *Global Strategy Journal, 11*(1), 3–16. <https://doi.org/10.1002/gsj.1396>.
* Bloomberg, J., 2018. *Digitization, digitalization, and digital transformation: confuse them at your peril*. [online] Forbes. Available at: <www.forbes.com/sites/jasonbloomberg/2018/04/29/digitization-digitalization-and-digital-transformation-confuse-them-atyour-peril> [Accessed 11 Sep. 2019].
* Brun, L., Gereffi, G., & Zhan, J. (2019). The “lightness” of industry 4.0 lead firms: Implications for global value chains. In P. Bianchi, C. Ruíz Dur´an, & S. Labory (Eds.), *Transforming Industrial Policy For The Digital Age* (pp. 37–67). Cheltenham, Glos: Edward Elgar Publishing. <https://doi.org/10.4337/9781788976152.00008>.
* Brynjolfsson, E. and McAfee, A., 2014. *The second machine age: work, progress, and prosperity in a time of brilliant technologies*. New York, NY: W.W. Norton & Company.
* Byrd, T. A., & Turner, D. E. (2001). An Exploratory Analysis of the Value of the Skills of IT Personnel: Their Relationship to IS Infrastructure and Competitive Advantage. *Decision Sciences, 32*(1), 21-47.
* Capgemini Digital Transformation Institute, 2017, “The Digital Culture Challenge: Closing the Employee-Leadership Gap” .
* Castells, M., 2010. *The rise of the network society: the information age: economy, society,and culture*. 2nd ed. Chichester, UK: Wiley-Blackwell.
* Chen, W., & Kamal, F. (2016). The impact of information and communication technology adoption on multinational firm boundary decisions. *Journal of International Business Studies, 47*(5), 563–576. <https://doi.org/10.1057/jibs.2016.6>.
* Cochoy, F., Hagberg, J., McIntyre, M.P. and Sörum, N., 2017. Digitalizing consumption: Introduction. In: F. Cochoy, J. Hagberg, N. Sörum and M.P. McIntyre, eds. *Digitalizing consumption: how devices shape consumer culture*. London, UK: Routledge, pp. 1–19.
* Çögenli, M.Z., (2021). Digitalization in Organizations. Cambridge Scholars Publishing.
* Dillon, S. M., Glavas, C., & Mathews, S. (2020). Digitally immersive, international entrepreneurial experiences. *International Business Review, 29*(6), Article 101739. <https://doi.org/10.1016/j.ibusrev.2020.101739>.
* ECLAC (Economic Commission for Latin America and the Caribbean). (October 2018) *Building a New Future: Transformative Recovery with Equality and Sustainability.* Santiago.LC/SES.38/3-P/Rev.1.
* Feldman, T. (1997). *An introduction to digital media*. New York, NY: Routledge.
* Chen, W., & Kamal, F. (2016). The impact of information and communication technology adoption on multinational firm boundary decisions. *Journal of International Business Studies, 47*(5), 563–576. <https://doi.org/10.1057/jibs.2016.6>.
* He, Q., Meadows, M., Angwin, D., Gomes, E., & Child, J. (2020). Strategic alliance research in the era of digital transformation: Perspectives on future research. *British Journal of Management, 31*(3), 589–617. <https://doi.org/10.1111/1467-8551.12406>.
* Hannibal, M., & Knight, G. (2018). Additive manufacturing and the global factory: Disruptive technologies and the location of international business. *International Business Review, 27*(6), 1116–1127. <https://doi.org/10.1016/j.ibusrev.2018.04.003>.
* Jacson Bloomberg, 2018, Digitization, Digitalization, And Digital Transformation: Confuse Them At Your Peril Forbes. Retrieved 29 August 2022.
* Johannsen, W., & Goeken, M. (2006). IT-Governance — neue Aufgaben des IT-Managements. *HMD — Praxis Der Wirtschaftsinformatik*, 250, 7-20.
* Kano, L., Tsang, E. W., & Yeung, H. W.-c (2020). Global value chains: A review of the multi-disciplinary literature. *Journal of International Business Studies, 51*(4), 577–622. <https://doi.org/10.1057/s41267-020-00304-2>.
* Kießling, M., Wilke, H., & Kolbe, L. M. (2010). Overcoming Challenges for Managing IT Innovations in Non-IT Companies. In: *Proceedings of the 16th Americas Conference on Information Systems (AMCIS 2010),* August 12-15, pp. 1-9. Lima, Peru, Atlanta, GA: Association for Information Systems.
* Lan, P.Y. (2021). Corporate Culture's Role on Digital Transformation, Lesson Learnt for Vietnam Businesses. *Advances in Economics, Business and Management Research,(196).* CC BY-NC 4.0 license -http://creativecommons.org/licenses/by-nc/4.0/.
* Laplume, A. O., Petersen, B., & Pearce, J. M. (2016). Global value chains from a 3d printing perspective. *Journal of International Business Studies, 47*(5), 595–609. <https://doi.org/10.1057/jibs.201>.
* Larsson, A. and Viitaoja, Y., 2017. Building customer loyalty in digital banking? A study of bank staff’s perspectives on the challenges of digital CRM and loyalty. *International Journal of Bank Marketing*, 35(6), pp. 858–77.
* Liboni, L. B. C., Luciana, Oranges, Jabbour, C. J. C., Oliveira, B. G., & Stefanelli, N. O. (2019). Smart industry and the pathways to HRM 4.0: Implications for scm. *Supply Chain Management-an International Journal, 24*(1), 124–146. https://doi.org/ 10.1108/scm-03-2018-0150.
* Nissen, V., Lezina, T., & Saltan, A. (2018). Rol menedzhmenta informacionnyh tehnologij v cifrovoj transformacii rossijskih kompanij [The Role of IT-Management in the Digital Transformation of Russian Companies]. *Foresight and STI Governance, 12*(3), 53-61. https://doi.org/10.17323/2500-2597-2018.3.53.61 [in Russian].
* Rüßmann, M., Lorenz, M., Gerbert, P., Waldner, M., Justus, J., Engel, P., & Harnisch, M. (2015). *Industry 4.0: The Future of Productivity and Growth in Manufacturing Industries*. Boston: Boston Consulting Group.
* Sabbagh, K., El-Darwiche, B., Friedrich,R., Singh, M. (2012). Maximizing the impact of digitalization. Strategy & Formerly Booz and Company.
* Sinkovics, N., Sinkovics, R. R., & Jean, R. J. B. (2013). The internet as an alternative path to internationalization? *International Marketing Review, 30*(2), 130–155. https://doi. org/10.1108/02651331311314556.

# Snow, C.C., Fjeldstad, O. D. & Langer, Arthur M. (2017). Designing the digital organization. [Journal of Organization Design](https://link.springer.com/journal/41469) 6(7). DOI 10.1186/s41469-017-0017-y.

* Sony, M., & Naik, S. (2020). Industry 4.0 integration with socio-technical systems theory: A systematic review and proposed theoretical model. *Technology in Society, 61*, Article 101248. <https://doi.org/10.1016/j.techsoc.2020.101248>.
* Strange, R., & Zucchella, A. (2017). Industry 4.0, global value chains and international business. *Multinational Business Review, 25*(3), 174–184. https://doi.org/10.1108/ mbr-05-2017-0028.
* Swetz, F. J., “Leibniz, the Yijing, and the Religious Conversion of the Chinese,” Mathematics Magazine, 76, No. 4 (2003), 276–291.
* Van Dijk, J.A.G.M. (2012). *The network society: social aspects of new media*. 3rd ed. London, UK: Sage Publications.
* Wachal, R. (1971). Humanities and computers: a personal view. *The North American Review*, 256(1), pp. 30–3.